

REZENSION

Forrest, Frank G.: *Valumetrics^N. The Science of Professional and Personal Ethics* (Value Inquiry Book Series 11). Amsterdam - Atlanta GA (Rodopi) 1994. XIV+179 pages. Hfl 60.-/US\$ 35.-

High are the aspirations of Frank G. Forrest who has presented with "Valuetrics^N" a book that pretends in its subtitle to provide a "science of professional and personal ethics". Forrest's main objective is to present a method that allows calculation in an objective way, without taking recourse to intuition or moral norms, considering solely the semantic properties of the concepts used in an act's description, the moral value of that act. At least three objections can be mounted against his account. Firstly, his notion of concept is dubious as to its correctness. Secondly, his assignment of values to concepts seems rather arbitrary, and in important cases it can even be shown to rest on outright falsities. And, finally, the mathematics underlying his calculations are flawed in several respects. We substantiate our criticisms in due course. Forrest starts with the observation that "goodness" is the basic phenomenon of ethics and presents a sketch of a definition: "Goodness is degree of concept meaning fulfillment." He tries to clarify this sketch by pointing out that "goodness is the degree that the set of actual properties of something corresponds with the set of names of properties given in the thing's concept" (p.2). He does not, however, provide any formally correct definition and, as will be shown, his account of "concept meaning fulfillment" is, in all of its likely interpretations, entirely untenable. Forrest concedes that "[t]his conception of goodness is different from people's general understanding of the word" (p.2). That it is indeed. Therefore, even if the definition were formally correct and the meaning of the definiens were sufficiently clear, it would still fail to be materially adequate. As commonly acknowledged, to render a pre-scientific concept scientific, it is not sufficient to replace it by some arbitrarily chosen scientific concept. In addition, the terms' meanings should coincide in relevant use as much as possible. It cannot be doubted, not even by Forrest himself, that this is not true for his notion. Why call it "goodness" then? Forrest confronts us then with what he thinks to be "elements of set theory". The things he tells us here sound rather strange. First, he introduces an epistemic classification unknown to standard mathematics of finite sets into *fixed finite sets* and *elastic finite sets*: "Fixed finite sets have members all of which are known. [...] Elastic finite sets have members some of which are unknown" (p.4). Here Forrest confounds, for no apparent reason, ontological and epistemic properties of

sets and then maintains falsely that the distinction into countable and non-countable infinite sets be an infinite analogue to this classification. What Forrest has to say about the cardinality of such sets is remarkable: "The number n is the cardinality of any fixed finite set, and k is the cardinality of any elastic finite set. Quantitatively, k is greater than n ($k > n$)" (p.5). Forrest, so it seems, really tries to tell us that the cardinality of finite sets (an "ontological measure" so to speak) depends on the knowledge of their members and that those sets whose members are known (to us, to God, or to Forrest perhaps?) all have the same cardinality, the latter being smaller than the cardinality common to all sets some of whose members are unknown. In section 4, "Concepts", Forrest lets up on mathematics and begins to attack semantics. He introduces three notions: that of a "meaning set", that of a referent set and finally a set "of actual properties which a particular member of REF [the referent set, rem.] possesses". None of these notions is defined and only that of a referent set may be familiar through common philosophical usage. The meaning set of "book" according to Forrest is " $M_{\text{book}} = \{\text{document, pages, written or printed material, binding, ..., covers}\}$ ". What is this supposed to mean? One interpretation would be that this set contains all, another that it contains some of the possible defining properties of "book". A further interpretation, suggested by some of Forrest's remarks, is that it contains all possible properties of books whatsoever. However, as his further remarks reveal, none of these interpretations will do. Forrest distinguishes three types of concepts. "Type I" concepts have "a fixed finite meaning set. All members are known. The cardinality of this set is n . A square, for instance, has four properties: (1) geometric figure, (2) four sides [...] A square cannot exist unless all these and only these properties are present" (p.7). Does Forrest try to tell us here that a square has exactly four properties? A square has certainly more than four properties. One can argue that it has indeed infinitely many properties. A square has in addition to those mentioned for instance the properties of being abstract, of not being identical with the number one, not being identical with the number two... and so forth. Finally, it is not unreasonable to believe that a square has properties unknown to anyone of us, be it only for the simple reason that some mathematical theory that exhibits these properties has not been invented yet (does, therefore, a square have "cardinality k "?). This suggests that what Forrest has in mind when speaking about properties are not properties *simpliciter* but defining properties. However, even this won't work. A square may be defined in several different ways

using other properties than those mentioned above. Moreover, this interpretation of Forrestian "properties" would not square with his view of "Type II" and "Type III" concepts: "A referent of a Type II concept must possess a certain number of properties contained in the meaning set to be a member of the class of things named by the concept. However it need not possess all the possible properties named in Mc [the meaning set, rem.]" (p.9). The referent of a term must certainly exhibit all the properties used in the term's definition. As an example of a "Type II" concept Forrest cites the word *house* and as a member of its meaning set he presents *porch*. A house need not possess a porch, but one that does is according to Forrest "better" than one that does not. Type III concepts, finally, "refer to people". Examples, according to Forrest, are *human being*, *person* and *girl*. He takes these concepts to have infinite meaning sets. His argument for this falls far short of being conclusive. It runs as follows: "The set of properties of a person is a set of sets. [...] The infinite set of thoughts people possess is among the members of the set of sets that comprise their complete set of properties" (p.11). Further, "[a] set of sets having one or more infinite members is infinite" (p.11). Therefore the meaning set of *person* is infinite. That all this is utterly false reveals a simple example. Let N_o and N_e be the sets of all odd and all even natural numbers respectively, both of which are clearly infinite. The set $S = \{N_o, N_e\}$, however, is finite only, containing exactly two members. Note that $2 \in N_e$ and $N_e \in S$ but $2 \notin S$, i.e. the elementhood-relation is, contrary to Forrest's tacit assumption, not transitive. A further, minor objection can be mounted against the first assumption. The actual explicit thoughts of a person at a given time as well as during his entire life span are certainly only finite in number. What are we supposed then to understand by the "infinite set of thoughts of a person"?

Forrest, as already noted, is aware of the fact that his use of the term "goodness" is at variance with its ordinary usage. So there arises the need to relate his term to the familiar one. To this end, he is coining two novel terms: "concept composition" and "concept transposition". He introduces them in chapter two as follows: "When meanings interact positively, the concept combination is compositional. [...] Negative interaction is transpositional" (p.28). No definitions are given, again we have to make do with examples. According to Forrest the terms *brand new* and *car*, for instance, interact positively, in contrast to the terms *damage* and *car*, which are said to interact negatively. This, he argues, is due to the fact that the term *brand new* "deepens" the meaning of *car*, whereas "merging the meanings" of *damage* and *car* "produces partial depletion of the meaning of the

concept car" (p.29). Forrest unsuccessfully tries to clarify his views by way of two "analogous" illustrations from chemistry and geometry. He gives illustrations where definitions are badly needed. Interesting results which reflect Forrest's mastery of modern mathematics are presented in chapter 3 under the title of "Hartmanean Algebra". Forrest begins to redefine set theoretical notions, – "($A \cup B$) is the set whose elements are the elements of both set A and set B" (this is in fact the definition of intersection) – to turn then to an original presentation of cardinal number arithmetic: "Let A and B be any two fixed finite sets. Then $\text{card } A = n$ and $\text{card } B = n$. Therefore, $\text{card } (A \cup B) = n + n$ (definition of union). But, ($A \cup B$) also is a fixed finite set. Thus $\text{card } (A \cup B) = n$. Therefore, $n + n = n$ which means that the sum of any two finite numbers is a finite number" (p.42). Forrest succeeds in packing four basic errors into this small passage. We will discuss them in some detail since they repeatedly peep out of several subsequent pages. First, from A and B being two finite sets ("fixed" or not) it does not follow that they have the same cardinality. The second mistake consists in believing that for any finite sets A and B and any cardinalities n, m if $\text{card } A = n$ and $\text{card } B = m$ then $\text{card } (A \cup B) = n + m$. This is true only if A and B are disjoint, as is easily shown by way of an example: Let $A = \{1, 2, 3\}$ and $B = \{2, 3, 4\}$, thus $(A \cup B) = \{1, 2, 3, 4\}$. Obviously, $\text{card } A = 3$, $\text{card } B = 3$, and, contrary to Forrest's erroneous assumption, $\text{card } (A \cup B) \neq 6$. Thirdly, that a set is finite, does not entail that its cardinality is n. Finally, the fact that the sum of any two numbers is a finite number is not expressed by " $n + n = n$ ". This equation tells us, in fact, that a number n that is added to itself is the number itself, which is true for $n = 0$ but false for all other finite cardinal numbers.

In our criticism of the above passage we have tacitly assumed that the "n" is used as a constant. The only other possibility would be to assume its use as a variable. In that case the quote would either not contain any single statement expressing a fact, but merely open statement *functions*, that do not express anything at all, or, alternatively, one would be forced to assume all variables to be in the scope of an implicitly assumed quantifier. The question then is what kind of quantifier? The equation $n^n = n$ on p.44, for example, is true for $n = 1$ but false for all other cardinal numbers of a finite set, so it cannot be a universal quantifier that is intended here. An existential quantifier, on the other hand, would be much too weak for Forrest's purposes. Forrest never clarifies his use of his n's and k's but informs us on pp. 5 and 33 that n and k are supposed to be "general finite numbers". Not only for the reason that such numbers, exhibiting the properties attributed to them by For-

rest, are foreign to contemporary mathematics and, thus, might possibly constitute a major innovation, but also for the sake of clarity, it would be very nice indeed to dispose of a definition of such numbers. The following pages are vitiated by errors some of which have already been discussed. All this makes a detailed review virtually impossible. Suffice it to address two selected points. As may be well known, one and the same fact or situation may be correctly described in more than one way, using different words. A case of murder, for example, is amenable to various differing but true descriptions, some of which are *prima facie* neutral as to the moral status of the murder, some of which are implicitly approving or disapproving. Since Forrest's calculations – that cannot be presented here for the aforementioned reasons – are so tightly fixed on the words that occur in the descriptions of a particular case, it is very likely that even if the devastating flaws mentioned above did not exist, they would still fail to be correct on account of their linguistic relativity, at least I cannot see anything in Forrest's account that would rule this out. On p.59 Forrest makes use of a principle of "Value Creation" the status of which is dubious. The principle tells us to "[s]elect courses of action[...] that result in value creation or that, secondarily, are value neutral" and to "avoid those that depreciate it". Forrest contends that parts of Hartmanean Algebra be "the basis" for this principle, but it is not clear in what sense "basis" is to be taken here. As far as I can make out, there is nothing (except perhaps for the principle *ex contradictione quodlibet*) that would justify the claim that the mathematics presented in this book

under the label of "Hartmanean Algebra" imply this principle. What else then is the justification for this normative statement?

It is not worthwhile to waste any more ink by discussing in any detail the rest of the book. On the subsequent pages, Forrest tries to apply the tools discussed and seeks to establish by scientific means alone that, for instance, "capital punishment is justified for murder" (p.99) and that "rape or incest justify abortion prior to 24 to 26 weeks after conception, but not beyond" (p.151). Any such procedure purporting to establish the validity of normative statements without recourse to other normative statements has been, since David Hume, subject to profound objections. Therefore, some remarks of Forrest's addressing this problem were to be expected here. He seems, however, to be fully unaware of the philosophical problems his enterprise raises.

The last chapter "Afterword and Outlook" terminates in an announcement that might sound like a threat to some ears: "[cardinal number arithmetic] is a blunt tool and has limitations. These difficulties possibly can be overcome using quantum wave theory in lieu of set theory [...]. Quantum ethics is plausible. It may evolve in the near future" (p.170).

The book combines lack of basic mathematical expertise with an untutored view of semantics and careless philosophical thought. Buying this book is a waste of money, reading it a waste of time. In Austria, Rodopi is known as the publisher of the *Grazer Philosophische Studien* and other high-quality publications. With books like this, however, Rodopi is very likely to lose the reputation it has acquired.

Hanspeter Fetz

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